

17. (Twice Amended) A method for treating the surface of an aluminum alloy high-pressure processed article, comprising heating an aluminum alloy containing Mg at a high temperature of 200° or above, etching the surface by a single step process of exposing the surface to [with] an aqueous solution containing a chelating agent wherein the aqueous solution consists of a solution having a pH of 7 or higher, and then carrying out at least one surface treatment selected from the group consisting of hydration oxidation treatment, coating type chromating, anodizing, alternating current electrolysis in an aqueous alkali solution, and coating.

REMARKS

As discussed on page 3 of the specification, one of the deficiencies associated with prior art processes was that etching step required multiple (e.g., two or more) stages. This reduces efficiency and increases costs. The claims have been amended to define the etching step as a single step process of exposing the surface to an aqueous solution containing a chelating agent. Support for the amendment is found for example on page 6, last paragraph, page 7, lines 5-16, and page 15 at Example 1.

Entry of the amendments is respectfully requested. Applicants submit that in view of the amendments, the pending claims define novel and non-obvious subject matter.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____

Charles H. Jew
Registration No. 34,192

Post Office Box 1404
Alexandria, Virginia 22313-1404
(415) 854-7400

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	
)	
S. Kamiyama, et al.)	Group Art Unit: 1102
)	
Application No.: 08/174,957)	Examiner: W. Leader
)	
Filed: December 28, 1993)	
)	
For: METHOD FOR SURFACE)	
TREATMENT OF ALUMINUM)	
ALLOY HIGH-TEMPERATURE)	
PROCESSED ARTICLES)	
ALLOY HIGH-TEMPERATURE)	

REPLY TO EXAMINER'S ANSWER

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants submit the following reply to the Examiner's Answer. An amendment amending claims 1 and 17 is being filed herewith.

In the Answer, the Examiner raised a new ground of rejection which is that Claims 1, 7-15 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chakrabarti, et al., U.S. Patent No. 5,055,257 in view of the admitted prior art and Lowenheim. The Examiner states that Chakrabarti discloses that aluminum alloys containing magnesium and capable of superplastic forming are known. Moreover, the Examiner states that Chakrabarti shows that it is known to heat an aluminum alloy containing magnesium at a high temperature of 200°C or above. The Examiner

concedes, however, that the claimed process differs from that of Chakrabarti by reciting etching a high-temperature processed aluminum alloy article with an aqueous solution containing a chelating agent and having a pH of 7 or higher and then carrying out hydration oxidation treatment, coating type chromating, anodizing, alternating current electrolysis in an aqueous alkali solution and/or coating. Nevertheless, the Examiner argues that the admitted prior art shows that it is known to etch and subsequently treat aluminum articles. Furthermore, Lowenheim is said to show that chelating agents have become important in the compounding of cleaners, that cleaning and conditioning pretreatments of aluminum are necessary as for all metals, and that anodizing and hydration oxidation are beneficial surface treatments for aluminum.

The Examiner concluded that it would have been obvious to use a chelating agent in an alkaline etchant used to etch a high-temperature processed aluminum article such as that of Chakrabarti and to have chosen anodizing and/or hydration oxidation treatment as a subsequent coating treatment because of the admitted prior art and Lowenheim.

Even assuming arguendo that Chakrabarti teaches the art as suggested by the Examiner, Appellants submit that the claimed invention which employs a single step etching process would not have been obvious to a person skilled in the art. Specifically, although Chakrabarti describes a heating process for superplastic metals, it does not teach or suggest the subsequent single step process etching of exposing the surface to an aqueous solution containing a chelating agent wherein the solution has a pH of 7 or

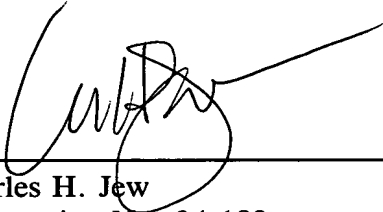
higher. Furthermore, the admitted prior art and Lowenheim also does not teach this single step process. In summary, Chakrabarti simply does not cure the deficiencies of the prior art.

In the present Reply Brief, Appellants have addressed only the new ground of rejection and do not concede in any way the points raised in their appeal brief notwithstanding the Examiner's Answer.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

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